

Amendments to Claims

1. **(Previously Amended)** A fuel cell stack having:
a plurality of fuel cells disposed between current-collecting end plates and
having water therein; and
at least one reactant gas manifold;
5 characterized by the improvement comprising:
each said at least one reactant gas manifold comprising either (a) a single
wall, with a VIP or GFP disposed inside or outside said single wall, or (b) a double
wall forming a chamber, said chamber containing a vacuum, a low thermal
conductivity gas, a VIP or a GFP; and
10 an insulator panel disposed on an external surface of each of said end plates,
each insulator panel comprising either (a) a hollow chamber containing a vacuum or
a low thermal conductivity gas, or (b) a VIP, or (c) a GFP.

2. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:
said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
5 stack is inoperative in an ambient environment for greater than fifty minus-degree-
days.

3. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:
said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
5 stack is inoperative in an ambient environment for about 100 minus-degree-days.

4. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:

said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
5 stack is inoperative in an ambient environment for about 150 minus-degree-days.

5. **(Currently Amended)** A fuel cell stack comprising:
a plurality of fuel cells disposed between current-collecting end plates; and
an insulator panel disposed on an external surface of each of said end plates,
each insulator panel comprising either ~~(a) a hollow chamber containing a vacuum or~~
5 ~~a low thermal conductivity gas, or (b) a VIP[[, or (c)]]~~ or a GFP.

6. **(Original)** A fuel cell stack according to claim 5 wherein said insulator
panels comprise either (a) a VIP or (b) a GFP with an external film of (c) plastic or
(d) resin/fiberglass composite for enhanced structural integrity.

7. **(Currently Amended)** An insulated reactant gas manifold for a fuel cell
stack comprising either (a) a single wall, with a VIP or GFP disposed inside or
outside said single wall, or (b) a double wall forming a chamber, said chamber
containing ~~a vacuum, a low thermal conductivity gas,~~ a VIP or a GFP.

8. **(Original)** A manifold according to claim 7 wherein said double wall
forming a chamber comprises a layer of either (c) plastic or (d) resin/fiberglass
composite on the surfaces of (e) a VIP or (f) a GFP for enhanced structural integrity.